

PROCEDURAL REMARKS

Pursuant to 37 C.F.R. section 1.137, an applicant may petition to revive an unintentionally abandoned application. 37 C.F.R. §1.137(b). A grantable petition pursuant to this section must include: (1) a reply to the outstanding Office action or notice, unless previously filed; (2) the petition fee set forth in section 1.17(m); (3) a statement that the entire delay was unintentional; (4) any terminal disclaimer that may be required. *Id.* The required reply may be met by filing a request for continued examination in compliance with section 1.114. 37 C.F.R. §1.137(c). An applicant may request continued examination after prosecution is closed pursuant to 37 C.F.R. section 1.114. 37 C.F.R. § 1.114(a). For the purposes of this section, prosecution is closed if the application is under appeal, or the last Office action is a final action, a notice of allowance, or an action that otherwise closes prosecution. 37. C.F.R. §1.114(b)

This request for reexamination is submitted with the attached petition for revival as fulfillment of the reply requirement, 37 C.F.R. section 1.137(b), and allowed by the acceptable reply description at 37 C.F.R. section 1.137. Prosecution in this application is closed, as the last Office action was final. A timely filed submission under 37 C.F.R. section 1.114 will be entered and considered, and finality of any Office action withdrawn. 37 C.F.R. § 1.114(d). Ordinarily, requests for continued examination must be filed prior to abandonment. 37 C.F.R. § 1.114(a)(2). However, a request for reexamination is an expressly listed acceptable form of the reply required with a petition for revival of an unintentionally abandoned application. 37 C.F.R. § 1.114. Thus, this request for reexamination conforms to all requirements under the combined provisions of sections 1.114 and 1.137. We respectfully submit that the final Office action should be withdrawn and this submission given full consideration. 37 C.F.R. § 1.114.

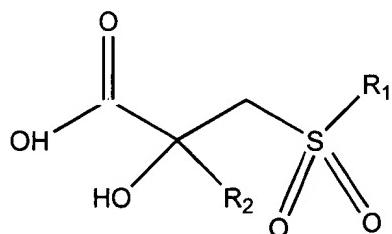
REMARKS

Responsive to all preceding correspondence, all of the Examiners comments have been studied. Claims 4, 20-25 and 31-36 are currently pending. In view of the following remarks, the application is submitted as being in condition for allowance.

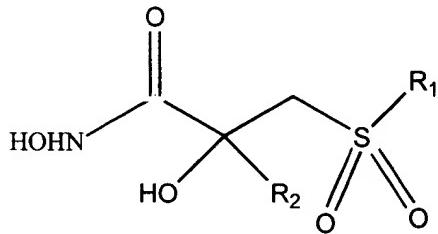
Claims 4, 20-25 and 31-36 are active. Claim 4 was previously amended. Claims 4, 20-25 and 31-36 are finally rejected under 35 U.S.C. § 103(a) as obvious over the “deprotection” product found in scheme 1, page 95 of Freskos et al. (WO 98/39326).

A. IN THIS CASE, ADDING A CARBON CHAIN WHERE NONE IS RECITED IN THE PRIOR ART IS NOT OBVIOUS PER SE.

The Examiner states in the Final Office Action, that Freskos et al. (WO 98/39326) teaches a generic group of compounds which embraces compounds here claimed and for this proposition cites scheme 1, page 95 of the reference, presumably for its disclosure of the “deprotection” product of:



Presumably, the R₁ and R₂ of such “deprotection” product is the same R₁ and R₂ as the Freskos reference teaches for its claimed compounds of the formula:



It is critical to note that the bond between the sulfur atom and the R₁ group of this Freskos compound cannot result in a carbon chain of any length. This is because Freskos at page 8, line 20 – page 9, line 19 and page 12, line 15 – page 16, line 15 states that :

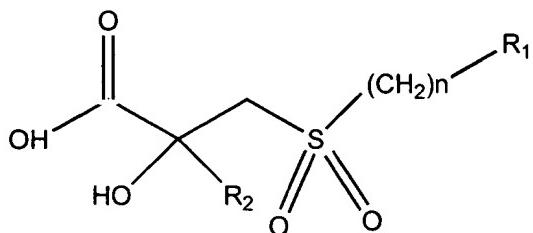
R₁ is a substituent that contains a 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical **bonded directly to the depicted SO₂ - group** and having a length greater than about that of a fully extended hexyl group and less than about that of a fully extended eicosyl group. In addition, R₁ defines a three-dimensional volume, when **rotated about an axis drawn through the SO₂ -bonded 1-position and the 4-position of a 6-membered ring radical or drawn through the SO₂ -bonded 1-position and the center of 3,4-bond of a 5-membered ring radical**, whose widest dimension in a direction transverse to the axis of rotation is about that of one furanyl ring to about that of two phenyl rings.

R₁ preferably contains a single aromatic or heteroaromatic ring that is itself substituted with another substituent, R₃. R₁ most preferably contains a phenyl ring, Ph, that is itself has a substituent, R₃, at the 4-position. R₃ is preferably a phenyl, a phenoxy, a phenylazo, a thiophenoxy, an anilino, a benzamido, a nicotinamido, an isonicotinamido, a picolinamido or an ureidophenyl group that can itself be substituted at the meta- or para-position or both by a single atom or a substituent containing a longest chain of up to eight atoms, excluding hydrogen. [Emphasis Added].

Freskos further defines their compound at page 16, lines 14-17, by stating that the R₁ group is :

An SO₂ -linked cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical is a 5- or 6-membered single-ring that is itself substituted with one other substituent, R₃. The SO₂ -linked single-ringed cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical is R₃ -substituted at its own 4-position when a 6-membered ring and at its own 3-position when a 5-membered ring. [Emphasis Added].

These ringed structures, which are directly bonded to the sulphur, cannot be equated to a compound in which a carbon chain separates the structures, as the Examiner proposes. The Examiner states that one of skill in the art would have been motivated to modify this “deprotection” compound by inserting an alkylene group -(CH₂)_n- ; n = 1, 2,3, etc) between the sulfur atom and the R₁ group of this “deprotection” compound because varying the size of a linking carbon chain is *per se* obvious. According to the Examiner’s argument, Freskos makes the following compound obvious:



However, what the Examiner argues does not apply. Due to the teachings within Freskos itself, there is not, and simply cannot be, a carbon chain between S and R₁ whose length could be varied. Additionally, to insert an alkylene group between the sulfur atom and the R₁ group of this Freskos compound would be directly against the teaching of the Freskos reference. Were Freskos permissive of an alkylene link between the sulfur atom and the R₁ group of this “deprotection” compound, then there may be some viability to the Examiner’s argument that varying the size of a linking carbon chain is *per se* obvious. However, Freskos is expressly not

permissive of an alkylene link between the sulfur atom and the R₁ group of this "deprotection" compound. Freskos expressly requires the 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical (R₁) to be bonded directly to the depicted SO₂ -group.

The Examiner's reconstruction and redesign of the Freskos compound to include an alkylene link between the sulfur atom and the R₁ group, which is contrary to the express teaching of Freskos, is improper. *In re Ratti*, 123 USPQ 349, 352 (CCPA 1959); *In re Schulpen*, 157 USPQ 52, 55 (CCPA 1968). The mere fact that the Freskos could be modified by inserting an alkylene group between the sulfur atom and the R₁ group of this "deprotection" compound would not have made the modification obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Here, Freskos itself diverges from and teaches away from an alkylene link between the sulfur atom and the R₁ group, hence it is error for the Examiner to argue that such alkylene link between the sulfur atom and the R₁ group is obvious in the Freskos compound. *In re Fine*, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988); and *In re Fritch*, 23 USPQ2d 1780, 1783 fn 12 (Fed. Cir. 1992).

To establish a prima facie case of obviousness, the Examiner must show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine*, 5 USPQ2d at 1598. There is no suggestion to combine, however, if a reference teaches away from its combination with another source. *In re Fine*, 5 USPQ2d at 1599. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant . . . [or] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *In re Gurley*, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). If when combined, the references "would produce a seemingly inoperative device," then they teach away from their combination. *In re Sponnoble*, 160 USPQ 237, 244 (CCPA 1969); see also *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose).

B. EVEN IF R₁ DIRECTLY BONDS THE S WHEN h=0, R₂ CANNOT ENCOMPASS ANY OF THE FRESKOS R₂ GROUPS, RENDERING THE MOLECULE PATENTLY DISTINGUISHABLE.

When h is zero, both R₁ and R₂ are affected. R₁ is defined as -(CH₂)_h-aryl or -(CH₂)_h-het wherein h is an integer from 0-6. Examiner correctly points out that in the singular case of h equaling zero, R₁ is directly linked to the sulphur atom. Examiner states that because the claims are so drafted that h can be zero, and in that instance, R₁ is directly linked to the sulphur atom, the instant claim 1 is not patentably distinguishable from the reference compounds. Yet, even if R₁ is directly linked to the sulphur, in that case, R₂ is so changed as to render the molecule patently distinguishable from the prior art.

The R₂ group of current claim 4 is,

R₂ is

- d) -(CH₂)_h-C₃₋₈ cycloalkyl,
- e) -(CH₂)_h- C₃₋₈ cycloalkenyl,
- f) -(CH₂)_h-aryl,
- g) -(CH₂)_h-het,
- h) -(CH₂)_h-Q.

When "h" = 0 the R₂ group of claim 4 reduces to:

- d) -C₃₋₈ cycloalkyl,
- e) - C₃₋₈ cycloalkenyl,
- f) -aryl,
- g) -het,
- h) -Q.

In contrast, the R₂ group of the Freskos compound is said at page 8 to be “hydridro, C₁-C₄ hydrocarbyl, hydroxyl- C₁-C₄ hydrocarbyl, C₁-C₄ hydrocarbyloxy, halo- C₁-C₄ hydrocarbyl, C₁-C₄ hydrocarbyloxymethyl, aminomethyl, (N-C₁-C₃ hydrocarbyl) aminomethyl, (N, N-di-C₁-C₃ hydrocarbyl) aminomethyl, (N-morpholino)methyl, (N-pyrrolidino)methyl, or (N-thiomorpholino)methyl group.”

Hence, in current claim 4, its R₂ group is not and cannot be any of the groups which Freskos names as its R₂ groups, namely, “**hydridro, C₁-C₄ hydrocarbyl, hydroxyl- C₁-C₄ hydrocarbyl, C₁-C₄ hydrocarbyloxy, halo- C₁-C₄ hydrocarbyl, C₁-C₄ hydrocarbyloxymethyl, aminomethyl, (N-C₁-C₃ hydrocarbyl) aminomethyl, (N, N-di-C₁-C₃ hydrocarbyl) aminomethyl, (N-morpholino)methyl, (N-pyrrolidino)methyl, or (N-thiomorpholino)methyl group.**” Nor is there any suggestion in Freskos that would motivate one of ordinary skill in the art to replace a Freskos R₂ group with a C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl, aryl, het, or Q group as current claim 4 requires when “h” = 0.

C. THE MOLECULE IS FURTHER DISTINGUISHABLE BY THE “Y” GROUP.

As discussed above in section A, when h equals a value of 1 or greater, then one does not have a compound of Freskos et al. (WO 98/39326) which requires a substituent that contains a 5- or 6-membered cyclohydrocarbyl, heterocyclo, aryl or heteroaryl radical **bonded directly to the depicted SO₂ -group**. Furthermore, when h does equal zero, the R₂ group is not and cannot be any of the groups which the Freskos R₂ groups encompass. Claim 33 restricts the R₂ group to the groups (d) – (h), wherein “h” equals to a value of 1 or greater.

It is also important to note that scheme 1, page 95 “deprotection” product of the Freskos et al. reference does not apply to the genus of compounds to which claims 35-36 are limited. The Freskos reference absolutely requires a hydroxyl group at the “Y” position to provide a “deprotection” product. In contrast, claim 35 requires a fluoro group and claim 36 requires a NR₉R₁₀ group at this “Y” position. Clearly, a hydroxyl is very different from either a fluoro or NR₉R₁₀ group.

CONCLUSION

The Applicants respectfully submit this REQUEST FOR CONTINUED EXAMINATION. The Applicants further submit that this application is now in condition for allowance, in view of the above remarks. Early notification to that effect is earnestly solicited.

Respectfully submitted,

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